CARBON BLACK

Also known as: Lamp black, Furnace black, Thermal black, Channel black
Chemical reference number (CAS): 1333-86-4

WHAT IS CARBON BLACK?

Carbon black is the general term used to describe a powdery commercial form of carbon. Carbon black is a lot like graphite.

Carbon black can form as an air-polluting particle when fuels (like gasoline, diesel fuel and coal) are not completely burned. These carbon black particles are often coated with other chemicals making them more hazardous than commercially produced pure carbon black. The particle coatings may include "polyaromatic hydrocarbons," also called PAHs. (Please refer to the chemical fact sheet on PAHs for more information on their health effects).

In the tire industry, carbon black is used to strengthen and color rubber. It is also used to color inks and leather, and to insulate electrical equipment.

HOW ARE PEOPLE EXPOSED TO CARBON BLACK?

Breathing: Most exposure to carbon black occurs when people breathe contaminated air. This type of exposure usually occurs in the workplace. However, outdoor air can sometimes contain traces due to its release by industries.

Drinking/Eating: Carbon black does not dissolve in water, so people are not likely to drink it in contaminated water.

Touching: Carbon black particles are heavy and drop quickly out of the air. The dust is a nuisance because it is black and sticky. It's difficult to wipe off skin or other objects. Touching carbon black is not likely to cause serious health effects.

DO STANDARDS EXIST FOR REGULATING CARBON BLACK?

No standards exist for the amount of carbon black allowed in the air of homes. We use a formula to convert established workplace limits to suggested home limits. Based on the formula, we recommend levels of carbon black in air be no higher than 0.07 milligrams per cubic meter of air.

There are no health-based standards for carbon black in soil or water.

WILL EXPOSURE TO CARBON BLACK RESULT IN HARMFUL HEALTH EFFECTS?

Inhaling carbon black particles can irritate the lungs and cause coughing. Carbon black can also irritate the eyes, nose and throat.

When people are exposed to high levels of carbon black over many years, the particles may lodge deep in their lungs. If it stays in the lungs, the condition may lead to bronchitis and eventually to a chronic condition called "obstructive pulmonary disease."

Cancer: Animal studies suggest long-term exposure to very high doses of pure carbon black may increase a person's risk of cancer.

Carbon black that comes from incomplete burning of hydrocarbons is more likely to contain cancer causing chemicals than pure carbon black.

Reproductive Effects: There is no evidence that carbon black causes reproductive or developmental problems.

Other Organ Systems: The most likely effect of exposure to carbon black is lung disease.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO CARBON BLACK?

There are no medical tests that will confirm occasional, short-term exposures to carbon black. People with long-term exposure may be given a chest x-ray. When read by a specialist, the X-ray can determine if lung damage has occurred.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center (800-222-1222)
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Madison, WI 53701-2659, (608) 266-1120.
- http://dhfs.wisconsin.gov/eh

Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health, with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4789 *Revised* 12/2000)